

REMARKS

The Office action dated June 29, 2004 and the cited references have been carefully considered.

Status of the Claims

Claims 1-57 are pending. Claims 58 and 59 are new, reciting subject matter already disclosed in the original specification and claims. Claims 27-57 are withdrawn pursuant to an earlier election to prosecute claims 1-26 currently. Therefore, claims 1-26, 58, and 59 remain in the current prosecution. The Applicants hereby affirm the election to prosecute claims 1-26, 58, and 59, and reserve the right to file one or more divisional patent applications directed at the invention or inventions of claims 27-57 at an appropriate future date.

The Examiner now further requires a species election. The Applicants elect the species directed to Figures 5 and 6 for the purposes of searching. Claims 1 and 14 are generic.

Claims 1-4, 6, 7, 12, and 13 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kirby (U.S. Patent 4,563,725). Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kirby in view of Haley (U.S. Patent 5,506,756) and Pastore et al. (U.S. Patent 5,285,352; hereinafter "Pastore"). Claims 8-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kirby in view of Azar (U.S. Patent 5,920,458). The Applicants respectfully traverse this rejection for the reasons set forth below.

Objection to the Drawings

The Examiner objected to the drawings because they are allegedly improperly crosshatched. The Applicants are submitting herewith amended Figures 1-7, wherein the various elements are crosshatched using the patterns shown on pages 600-99 of the current MPEP. Therefore, this objection is now overcome.

The Examiner also objected to the drawings under 37 C.F.R. § 1.83(a). Specifically, The Examiner requires drawings to show a dielectric protective layer recited in claim 5, a heat sink having fins recited in claim 8, a heat sink comprising a heat pipe recited in claim 9, and a heat sink comprising a mechanism for active cooling recited in claims 10 and 11. The Applicants respectfully point out that a dielectric protective layer is already shown in Figure 4 (see numeral 80). Therefore, the Applicants believe that another drawing is not needed to show this element. The Applicants are submitting herewith new Figures 8-10 to show heat sinks having fins extending away from the dielectric film as recited in claim 8, heat sinks having heat pipes as recited in claim 9, and heat sinks having an active cooling mechanism, as recited in claims 10 and 11. No new matter has been added. Therefore, the Applicants respectfully submit that the objections to the drawings are now overcome.

Claim Rejection Under 35 U.S.C. § 102(b)

Claims 1-4, 6, 7, 12, and 13 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kirby. The Applicants respectfully traverse this rejection because Kirby does not disclose each and every element of each of claims 1-4, 6, 7, 12, and 13.

"[A]n invention is anticipated if the same device, including all the claim limitations, is shown in a single prior art reference. Every element of the claimed invention must be *literally* present, arranged as in the claim. . . . The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989) (emphasis added).

Kirby discloses only a circuit board attached to a "rigid thermally conductive plate." See; e.g., column 6, lines 6-65 (emphasis added). The plate (16) serves as a heat sink and covers an entire area of the circuit board (1). See; Figures 1-5. Since the rigid plate covers an entire surface of the circuit board, the combined structure cannot be flexible.

In contradistinction, claims 1-4, 6, 7, 12, and 13 recite a flexible interconnect structure including a flexible dielectric film and heat sinks being attached to selected portions of the film and covering less than an entire surface of the flexible film.

Since Kirby does not literally disclose every element of each of claims 1-4, 6, 7, 12, and 13, Kirby does not anticipate these claims.

Claim Rejection Under 35 U.S.C. § 103(a)

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kirby in view of Haley and Pastore. The Applicants respectfully traverse this rejection because a combination of Kirby, Haley, and Pastore not only does not teach or suggest all of the limitations of claim 5, but also teaches away from the invention recited in claim 5.

"To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." "All words in a claim must be considered in judging the patentability of that claim against the prior art." M.P.E.P. § 2143.03, p. 2100-133 (8th ed., Rev. 2, May 2004). Moreover, a reference teaches away from the claimed invention cannot render such claimed invention obvious. *In re Peterson*, 315 F.3d 1325, 1332 (Fed. Cir. 2003).

As pointed out above, Kirby does not disclose, teach, or suggest that heat sinks are attached to portions of a flexible dielectric film less than an entire surface thereof. In fact, Kirby's structure is not flexible because his circuit board is attached to a rigid plate. Haley discloses an integrated circuit protected by a housing that provides stiffness to structurally support the integrated circuit. In other words, Haley's final structure is stiff or rigid, and this is what Haley desires to achieve his objectives. Such a stiff structure is diametrically opposite to the flexible interconnect structure recited in the present claim 5. Pastore merely mentions that a semiconductor die and parts of the substrate are encapsulated in an epoxy resin package body. Thus, a combination of Kirby, Haley, and Pastore not only does not teach or suggest all of the limitations of claim 5, but teaches away from a flexible interconnect recited in claim 5. Therefore, a combination of Kirby, Haley, and Pastore does not render claim 5 obvious.

Claims 8-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kirby in view of Azar. The Applicants respectfully traverse this rejection because: (1) a combination of Kirby and Azar does not teach or suggest all of the limitations of each of claims 8-11, and (2) Kirby teaches away from the flexible structure of claims 8-11.

As pointed out above, Kirby does not disclose, teach, or suggest that heat sinks are attached to portions of a flexible dielectric film less than an entire surface thereof. In fact, Kirby's structure is not flexible because his circuit board is attached to a rigid plate. Because Kirby's metal plate is rigid, Kirby teaches away from a flexible structure recited in claims 8-11. Therefore, adding Azar to show enhanced cooling implements still does not teach or suggest all of the elements of each of claims 8-11 and still does not motivate a person skilled in the art to make a flexible structure recited in claims 8-11.

Since a combination of Kirby and Azar does not teach or suggest all of the elements of each of claims 8-11, and since Kirby himself teaches away from the invention of claims 8-11, these claims are patentable over Kirby in view of Azar.

In view of the above, it is submitted that the claims are patentable and in condition for allowance. Reconsideration of the rejection is requested. Allowance of claims at an early date is solicited.

Respectfully submitted,



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